

TRIDENTELLA WILLIAMSII, A NEW SPECIES OF
ISOPOD CRUSTACEAN FROM THE BRITISH
VIRGIN ISLANDS, WESTERN ATLANTIC
(FLABELLIFERA: TRIDENTELLIDAE)

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Abstract.—*Tridentella williamsii*, n. sp., described from the British Virgin Islands, is distinguished from other Atlantic species by its distinctively tuberculate pleotelson. A species list for the genus is given.

Previously only two *Tridentella* species have been described from the Atlantic, *T. virginiana* (Richardson, 1900) and *T. recava* Bowman, 1986. Herein a third Atlantic species, *T. williamsii*, is described from the tropical waters of the Virgin Islands, based on examination of specimens from the United States National Museum of Natural History (USNM).

Family Tridentellidae Bruce, 1984
Genus *Tridentella* Richardson, 1905
Tridentella williamsii, new species
Figs. 1–3

Material.—Caribbean Sea, British Virgin Islands, “fish parasites,” two males, 8.5 mm holotype (from *Epinephelus mystacinus*), USNM 239198 and 4.8 mm paratype (from *E. flavolimbatus*), USNM 239199.

Description of male.—Length up to 8.5 mm, about 2.3 × as long as wide. Cephalon without tubercles, with small pointed rostrum meeting frontal lamina and slightly separating antennule bases. Eyes large, facets well-developed. Pereonites 1–3 without dorsal ornamentation, 4–7 with small tubercles along posterior margins, 7 with short, incomplete tubercle rows extending medially on lateral margins. Pereon widest at pereonite 3. Coxae 6–7 visible in dorsal view; coxae 6 extending to midlength of pereonite 7, coxae 7 extending to pleonite 2. All coxae without carinae, tubercles, spines or setae

(Fig. 1). Pleonites 1–5 with row of tubercles on posterior margins; pleonites 3–4 with additional, short median tubercle row, pleonite 5 with 2 additional tubercle rows. Pleon widest at pleonite 1. Pleonite 1 laterally encompassed by pereonite 7 coxae; pleonite 5 narrow, encompassed laterally by pleonite 4. Pleotelson subtriangular, apex rounded, crenulate, with 6 setae; lateral margins with very large tubercles, dorsum with tubercle row on either side of medial depression, and 2 short tubercle rows near pleotelson base (Fig. 1).

Antennule extending slightly past posterior margin of cephalon (Fig. 1); peduncle article 3 longer than 1 and 2 combined, flagellum of 13–14 articles (Fig. 2A). Antenna extending beyond midlength of pereonite 3 (Fig. 1), peduncle article 5 longest, flagellum of 15 articles (Fig. 2B). Frontal lamina pentagonal, lateral margins slightly concave; clypeus short, very broad; labrum small, not encompassed by clypeus (Fig. 2C). Left mandible with narrow, unicuspid incisor process and triangular, setose molar process; middle palp article longest, with 14 simple setae and 1 plumose marginal seta (hereafter PMS), apical article with 20 simple setae and 1 PMS (Fig. 2D). Maxillule lateral lobe with 5 large apical spines, 5 smaller subapical hooklike spines; medial lobe slender, with simple rounded apex and 1 apical seta (Fig. 2E). Maxilla 2-segmented,

apex with many denticles (Fig. 2F). Maxilliped palp articles 1–3 with simple medial marginal setae, distal 3 articles with comb-like setae; endite extending to penultimate palp article, without coupling hooks, with single apical seta (Fig. 2G).

Pereopods 1–3 subsimilar, subprehensile. Pereopod 1 stouter than 2–3, ischium with 2 simple spines on distomedial and distolateral angles; merus medial margin with 3 stout bifid spines, 1 bifid and 2 simple setae, distolateral angle with 2 long spines; carpus medial margin with 1 bifid, 2 simple spines; propodus medial margin with 1 bifid, 1 simple seta, and 1 short spine distally, lateral margin with 3 simple setae; dactylus with 1 simple seta at base of unguis on medial margin, lateral margin with 3 simple setae proximal to unguis (Fig. 3A). Pereopods 4–7 slender, ambulatory. Pereopod 4 basis with simple spine on distomedial angle; ischium medial margin with 2 simple setae and 2 spines, distolateral angle with 1 large bifid spine, 1 simple spine; merus medial margin with 1 simple and 9 bifid spines, distolateral angle with 1 simple, 2 bifid spines; carpus distomedial angle with 2 bifid, 2 simple spines, 1 seta; propodus medial margin with 1 bifid, 2 simple spines and 2 simple setae, distolateral margins with 3 simple setae; dactylus with 1 seta at base of unguis on medial margin (Fig. 3B). Pereopod 7 basis with 2 spines on distomedial angle, lateral margin with 8 short setae; ischium medial margin with 4 bifid and 4 simple spines, distolateral angle with 2 plumose setae, 2 bifid spines; merus medial margin with 4 simple and 3 bifid spines, distolateral angle with 3 bifid spines, 1 simple seta; carpus medial margin with 1 simple and 4 bifid spines, distolateral angle with 1 spine, 2 simple and 10 plumose setae; propodus medial margin with 5 bifid spines, distolateral angle with 1 seta; dactylus medial margin with single seta at base of unguis, lateral margin with 3 setae proximal to unguis (Fig. 3C). Penes set distinctly apart on sternite 7.

Pleopods 1–5 rami with PMS as figured,

endopod of pleopod 5 naked; exopods of 3–5 with complete or partial transverse sutures. Peduncles of pleopods 1–5 with 1 spine on lateral margins. Peduncles of pleopods 1–5 with 1 spine on lateral margins. Pleopod 1 peduncle with 3 coupling spines, 1 PMS on medial margin; pleopods 2–4 peduncles with 4 coupling spines and 2 PMS on medial margins. Appendix masculina of pleopod 2 rodlike, with pointed apex, arising from proximal medial margin of endopod (Fig. 3D–H).

Uropods extending well beyond pleotelson apex; exopod one-half width of endopod, both rami with scalloped margins inset with PMS, lacking spines. Uropod peduncle with 3 simple setae, 2 PMS on lateral margin, distomedial angle with 3 PMS (Fig. 3I).

Etymology.—This species is named for Ernest H. Williams, Jr. in recognition of his contributions to Caribbean isopod biology.

Remarks.—*Tridentella williamsi* is easily distinguished from the other two Atlantic species by its strongly tuberculate pleotelson and lack of cephalic tubercles. *T. virginiana* (Richardson) has four cephalic tubercles and an unornamented, smoothly rounded pleotelson. *T. recava* Bowman lacks cephalic tubercles, has a pleotelson apex with a distinctive U-shaped excavation, and the pleotelson dorsum is unornamented.

Tridentella williamsi is the 14th species known in the genus, and has a highly ornamented or sculpted pleotelson as do 9 of the other 13 species. *T. williamsi* also lacks the marginal uropodal spines found in five other *Tridentella* species.

Species list.—The currently-known *Tridentella* species and their localities are listed below. See Delaney & Brusca (1985) for synonymies.

1. *T. acheronae* Bruce, 1988; New Zealand.
2. *T. cornuta* Kussakin, 1979; northwest Pacific.
3. *T. glutacantha* Delaney & Brusca, 1985; California.

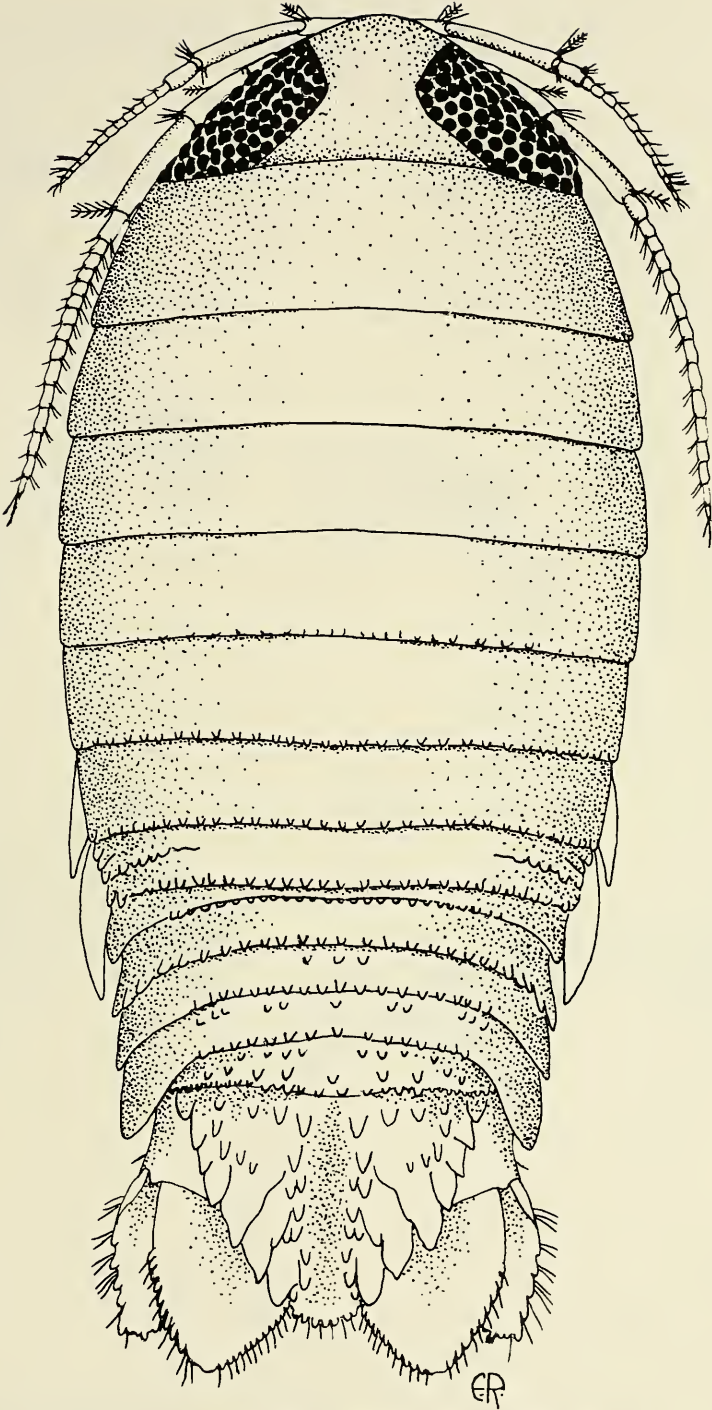


Fig. 1. *Tridentella williamsi*, n. sp., dorsal view of holotype male, USNM 239198, British Virgin Islands.

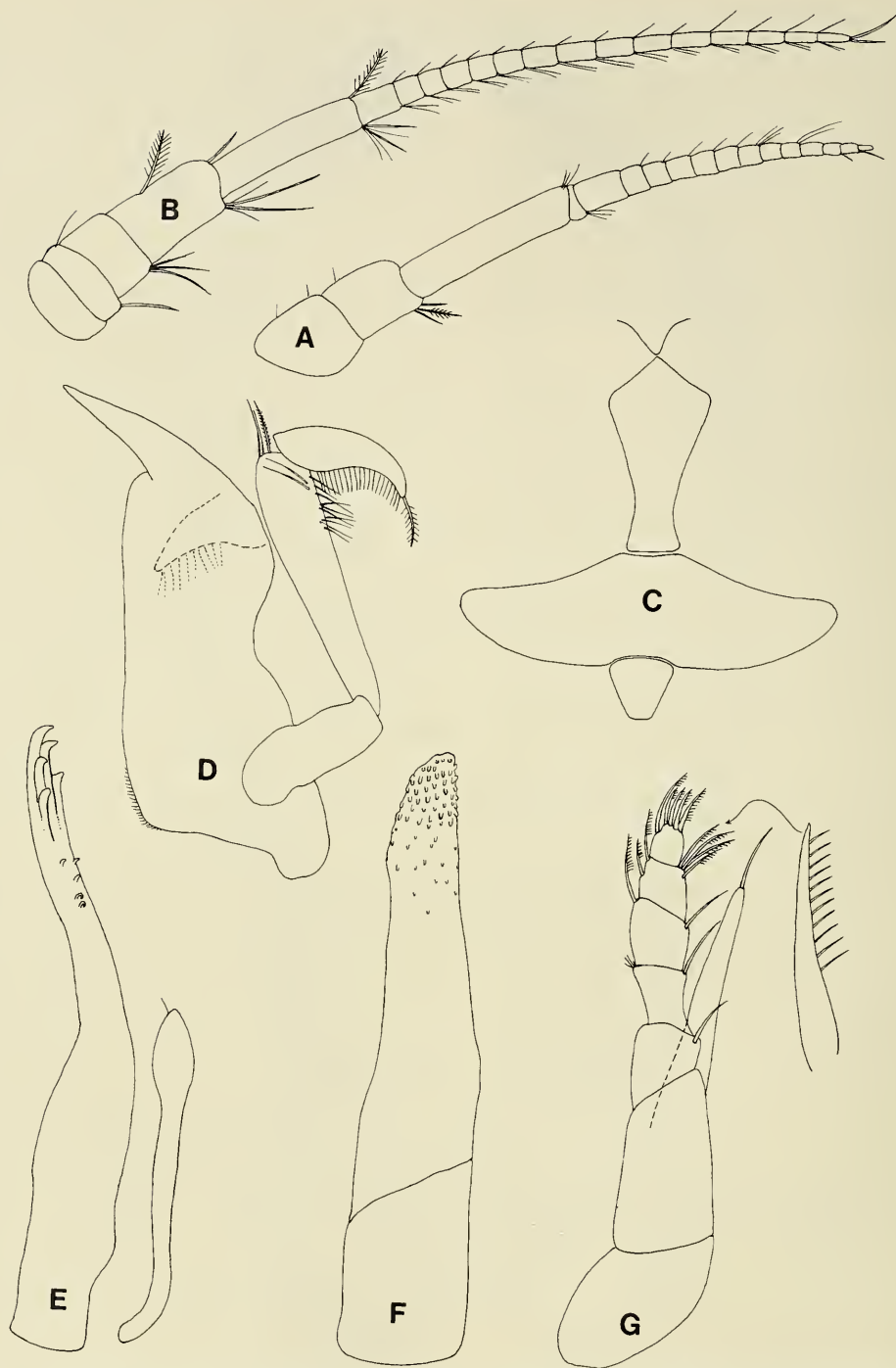


Fig. 2. *Tridentella williamsi*, holotype: A, Antennule; B, Antenna; C, Frontal lamina, clypeus and labrum; D, Left mandible; E, Maxillule; F, Maxilla; G, Maxilliped.

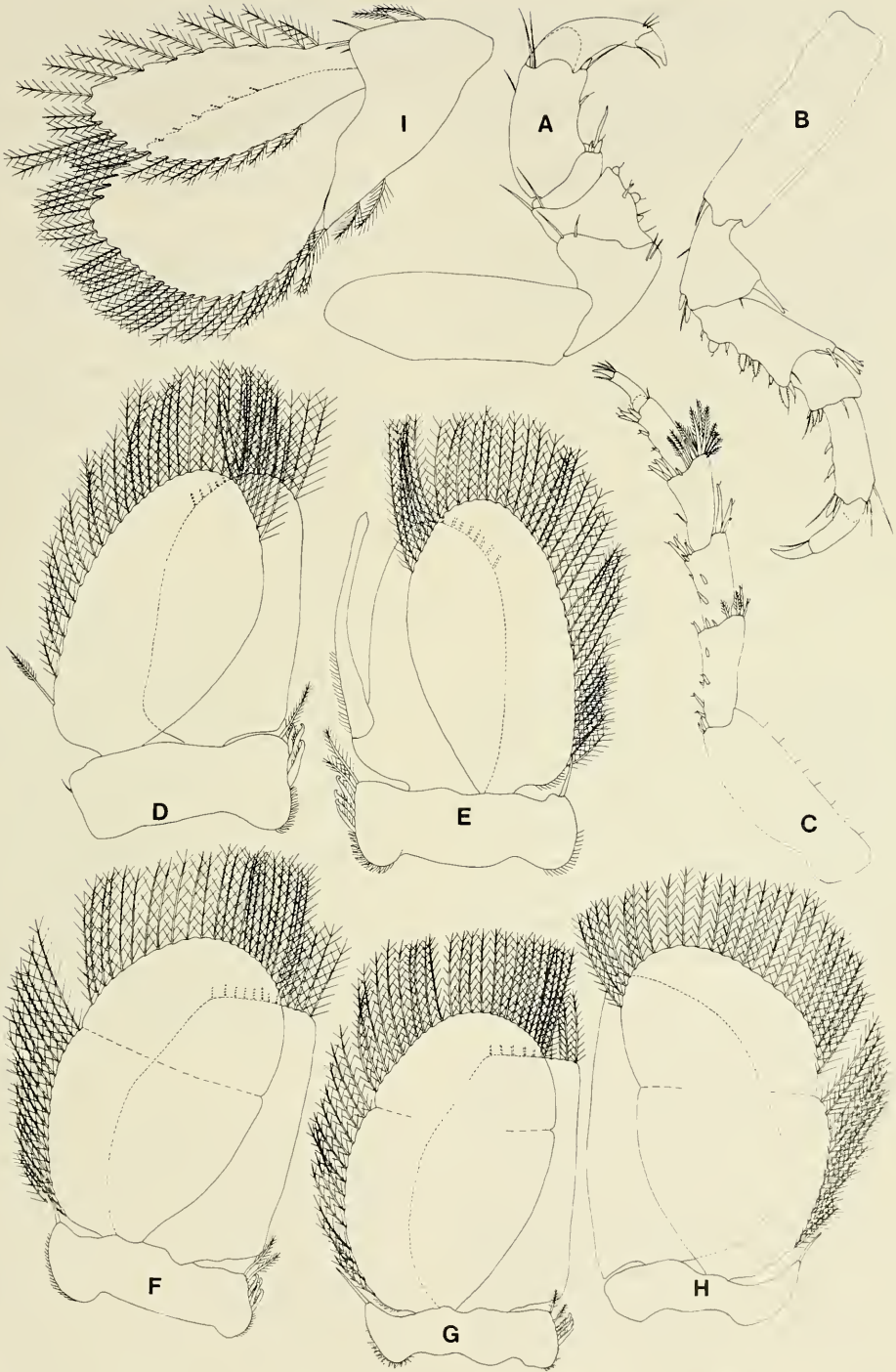


Fig. 3. *Tridentella williamsi*, holotype: A, Pereopod 1; B, Pereopod 4; C, Pereopod 7; D, Pleopod 1; E, Pleopod 2; F, Pleopod 3; G, Pleopod 4; H, Pleopod 5; I, Ventral view of uropod.

4. *T. japonica* Thielemann, 1910; Japan.
5. *T. laevicephalax* Menzies, 1962; southern Chile.
6. *T. ornamenta* (Menzies & George, 1972); Peru-Chile Trench.
7. *T. quinicornis* Delaney & Brusca, 1985; California.
8. *T. recava* Bowman, 1986; New York Bight.
9. *T. saxicola* (Hale, 1925); Australia.
10. *T. sculpturata* Kussakin, 1955; north-west Pacific.
11. *T. tangaroae* Bruce, 1988; New Zealand.
12. *T. virginiana* (Richardson, 1900); Virginia to Nova Scotia.
13. *T. vitae* Bruce, 1984; Fiji.
14. *T. williamsi*, n. sp.; British Virgin Islands, Caribbean.

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Literature Cited

- Bowman, T. E. 1986. *Tridentella recava*, a new isopod from tilefish burrows in the New York Bight (Flabellifera: Tridentellidae).—Proceedings of the Biological Society of Washington 99:269–273.
- Bruce, N. L. 1984. A new family for the isopod genus *Tridentella* Richardson, 1905, with description of a new species from Fiji.—Zoological Journal of the Linnean Society, London 80(4):447–455.
- . 1988. Two new species of *Tridentella* (Crustacea, Isopoda, Tridentellidae) from New Zealand.—National Museum of New Zealand Records 3(7):71–79.
- Delaney, P. M., & R. C. Brusca. 1985. Two new species of *Tridentella* Richardson, 1905 (Isopoda: Flabellifera: Tridentellidae) from California, with a rediagnosis and comments on the family, and a key to the genera of Tridentellidae and Corallanidae.—Journal of Crustacean Biology 5(4):728–742.
- Hale, H. M. 1925. Review of the Australian isopods of the cymothoid group. Part I.—Transactions of the Royal Society of South Australia 49:128–185.
- Kussakin, O. 1955. New for far-eastern waters U.S.S.R.—the warm water families of Isopoda.—Transactions of the Institute of Zoology and Academy of Sciences U.S.S.R. 18:228–234 (text in Russian).
- . 1979. Marine and brackish-water Isopoda of cold and temperate waters of the Northern Hemisphere. I. Flabellifera.—Opredeliteli po Faune SSSR 12:1–470, Academy of Sciences, Leningrad, U.S.S.R. (text in Russian).
- Menzies, R. J. 1962. The zoogeography, ecology and systematics of the Chilean marine isopods.—Reports of the Lund University Chile Expedition 1948–49, No. 42, Lunds Universitets Arskriffter, Avd. 2, Bund 57:1–162.
- , & R. Y. George. 1972. Isopod Crustacea of the Peru-Chile Trench.—Anton Bruun Report Number 9:124 pp., Texas A&M Press.
- Richardson, H. R. 1900. Synopses of North American invertebrates. VII. The Isopoda.—American Naturalist 34:207–230, 295–309.
- . 1905. Isopods of North America.—United States National Museum Bulletin 54:1–727.
- Thielemann, M. 1910. Beitrage zur Kenntnis der Isopodenfauna Ostasiens.—Abhandlungen der Mathematisch-Naturwissenschaftlichen Klasse der Koeniglich-Bayerische Akademie der Wissenschaften, Supplementary Volume 2, Abhandlung 3:1–109.

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